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(54) Title: PROTEIN DESIGN AUTOMATION FOR PROTEIN LIBRARIES

(57) Abstract: The invention relates to the use of protein design automation (PDA) to generate computationally prescreened secondary libraries of proteins, and to methods and compositions utilizing the libraries.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 47089 A (CALIFORNIA INSTITUTE OF TECHNOLOGY) 22 October 1998 (1998-10-22) page 6, line 26 - line 30 ---	1
X	WO 98 32845 A (BIOINVENT INTERNATIONAL AB) 30 July 1998 (1998-07-30) the whole document ---	7,8
X	WO 95 22625 A (AFFYMAX) 24 August 1995 (1995-08-24) the whole document --- -/--	7,8

☒ Further documents are listed in the continuation of box C

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>B I DAHIYAT & S L MAYO: "De novo protein design: fully automated sequence selection" SCIENCE., vol. 278, no. 5335, 3 October 1997 (1997-10-03), pages 82-87, XP002188179 AAAS. LANCASTER, PA., US ISSN: 0036-8075 cited in the application the whole document</p> <p>---</p>	1-9
A	<p>B I DAHIYAT & S L MAYO: "Protein design automation" PROTEIN SCIENCE., vol. 5, no. 5, May 1996 (1996-05), pages 895-903, XP002073372 CAMBRIDGE UNIVERSITY PRESS, CAMBRIDGE., GB ISSN: 0961-8368 cited in the application the whole document</p> <p>---</p>	1-9
P,X	<p>WO 00 23564 A (XENCOR INC.) 27 April 2000 (2000-04-27) the whole document</p> <p>-----</p>	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/40091

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9847089	A	22-10-1998	AU 6965498 A EP 0974111 A1 US 6188965 B1 WO 9847089 A1 US 6269312 B1 US 2001032052 A1 US 2001039480 A1 US 2002004706 A1	11-11-1998 26-01-2000 13-02-2001 22-10-1998 31-07-2001 18-10-2001 08-11-2001 10-01-2002
WO 9832845	A	30-07-1998	AU 5771898 A EP 0988378 A1 WO 9832845 A1 JP 2001508660 T	18-08-1998 29-03-2000 30-07-1998 03-07-2001
WO 9522625	A	24-08-1995	US 5605793 A AT 211761 T AU 703264 B2 AU 2971495 A CA 2182393 A1 CN 1145641 A DE 752008 T1 DE 934999 T1 EP 1094108 A2 EP 0752008 A1 EP 0934999 A1 JP 10500561 T JP 2001057893 A WO 9522625 A1 US 6180406 B1 US 6132970 A US 6287861 B1 US 6291242 B1 US 6277638 B1 US 6323030 B1 US 6319713 B1 US 6309883 B1 US 6297053 B1 US 5830721 A US 5811238 A US 6117679 A US 5837458 A	25-02-1997 15-01-2002 25-03-1999 04-09-1995 24-08-1995 19-03-1997 05-04-2001 05-04-2001 25-04-2001 08-01-1997 11-08-1999 20-01-1998 06-03-2001 24-08-1995 30-01-2001 17-10-2000 11-09-2001 18-09-2001 21-08-2001 27-11-2001 20-11-2001 30-10-2001 02-10-2001 03-11-1998 22-09-1998 12-09-2000 17-11-1998
WO 0023564	A	27-04-2000	AU 1119000 A EP 1157093 A1 WO 0023564 A2	08-05-2000 28-11-2001 27-04-2000